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EXAMINER

LIN, KENNY S

ART UNIT

PAPER NUMBER

2152

DATE MAILED: 06/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

DETAILED ACTION

1. Claims 1-2 and 4-26 are presented for examination. Claim 3 is canceled.
2. Applicant and the assignee of this application are required under 37 CFR 1.105 to provide the following information that the examiner has determined is reasonably necessary to the examination of this application. Applicant is required to provide references of Webopedia regarding the definitions of variable and vector.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-2 and 4-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Although the specification disclosed to determine the number of nodes to be activated based on an activation rule, nowhere in the specification suggests or teaches to determine the number of nodes to be activated based on the number of elements in a vector as claimed in claims 1 and 12. Page 16, lines 13-20 of the specification described a determination made based on whether there are more elements in vector V to be processed and repeat the processes until all elements in vector V have

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been processed. This is clearly different from the claim language of “**at run time** determining a **number of** work nodes to be activated in the multinode **based on a number of** elements in a vector”. The descriptions do not clearly or inherently teach to activate the number of nodes based on an activation rule based on the number of elements in a vector. The determination described in page 16 only suggests start new instance for an element at a time and repeating the same process according all each elements in the vector. It does not disclose to determine a number of work nodes to be activated based on a number of elements in a vector at run time where the number of work nodes and the number of elements can be of different values (i.e. determine 2 work nodes to be activated based on 6 elements in a vector, or 10 work nodes based on 3 elements...etc). Furthermore, there is no determining process disclosed in the specification (determining a number of work nodes to be activated is different from actually activating new instances). Last, the descriptions in page 16 do not clearly or inherently teach that to determining a number of work nodes to be activated **at run time** (i.e. at the start). Figure 3 shows steps 374 and 378 repeatedly *during run time* rather than determining number of work nodes to be activated at the beginning of the run time (at run time, where the word “at” is used for defining a specific moment in time). For these reasons, the descriptions fail to disclose determining a number of work nodes to be activated based on a number of elements in a vector at run time. How is the number of the elements in a vector affecting the activation? What is the reason for determining the number of work nodes to be activated based on the elements of a vector at run time? Is the number of work nodes to be activated corresponding to the number of elements of a vector?

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5. Claims 1-2 and 4-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Nowhere in the specification suggest or teaches to determine the number of nodes to be activated based on the number of elements in a vector. Determining the number of nodes to be activated based on a vector does not inherently teach or suggest the determination of the number of nodes to be activated based on the number of elements in the vector. Page 16, lines 13-20 of the specification described a determination made based on whether there are more elements in vector V to be processed and repeat the processes until all elements in vector V have been processed. This is clearly different from the claim language of “**at run time** determining a **number of** work nodes to be activated in the multinode **based on a number of** elements in a vector”. The descriptions do not clearly or inherently teach to activate the number of nodes based on an activation rule based on the number of elements in a vector. The determination described in page 16 only suggests start new instance for an element at a time and repeating the same process according all each elements in the vector. It does not disclose to determine a number of work nodes to be activated based on a number of elements in a vector at run time where the number of work nodes and the number of elements can be of different values (i.e. determine 2 work nodes to be activated based on 6 elements in a vector, or 10 work nodes based on 3 elements...etc). Furthermore, there is no determining process disclosed in the specification (determining a number of work nodes to be activated is different from actually activating new instances). Last, the descriptions in page 16 do not clearly or inherently teach that to

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determining a number of work nodes to be activated **at run time** (i.e. at the start). Figure 3 shows steps 374 and 378 repeatedly *during run time* rather than determining number of work nodes to be activated at the beginning of the run time (at run time, where the word “at” is used for defining a specific moment in time). For these reasons, the specification lack written descriptions to disclose determining a number of work nodes to be activated based on a number of elements in a vector at run time.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-2 and 4-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: cooperative relationship between activation and elements in a vector is not shown. How is the work nodes activated based on the elements in a vector? Is the activation of the work node based on the elements of the vector according to steps 374 and 378 of figure 3? If yes, applicant is required to amend the claims to include these steps since the current claim language fail to show activation processes according to the steps of figure 3.

Claims 1 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP

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§ 2172.01. The omitted steps are: activating of work nodes. The current claims only claim to determine work nodes **to be activated**, but fail to claim the step of actually activating the work nodes.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Du et al (hereinafter Du), US 6,041,306, in view of Applicant Admitted Prior Art (AAPA).

10. Du was cited in the previous office action.

11. As per claim 21, a method for invoking multiple parallel instances of a same node, comprising:

- a. Defining a multinode (col.4, line 10-28, 49-56) as a node that allows multiple parallel instances of a same work node in a workflow (col.3, lines 1-10, col.4, lines 10-14, 17-22, 45-50);

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- b. Determining, based on an activation rule, whether the activation of the multiple parallel instances of the same work node is a resource-based activation or a variable-based activation (col.2, lines 22-51, col.6, lines 1-6); and
- c. Activating the multinode to execute plural instances of the same work node in the workflow (col.6, lines 39-48).

12. Du did not specifically teach to allow activation of multiple parallel instance of a same work node. However, the teaching of allowing activation of multiple parallel instance of a same work node is applicant admitted prior art (see page 5, lines 3-21 of the specification). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Du and applicant admitted prior art (AAPA) because AAPA's teaching of multiple parallel instance to enable Du's method to have each work node to perform a sequence of activities in parallel and span to several business organizations (see Du, col.4, lines 45-56, see specification page 3, lines 20-21, page 5, lines 3-21).

13. Claims 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Du and AAPA as applied to claim 21 above, and further in view of Dugan et al (hereinafter Dugan), US 2002/0083166.

14. Dugan was cited in the previous office action.

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15. As per claim 22, Du and AAPA taught the invention substantially as claimed in claim 21. Du and AAPA did not specifically teach that reading a variable name to determine a number of the multiple parallel instances of the same work node to activate when the activation is based on the variable-based activation. Dugan taught to comprise a variable name reader for reading a variable name to determine a number of the multiple parallel instances of the same work node to activate when the activation is based on the variable-based activation (pp. 0067-0069). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Du, AAPA and Dugan because Dugan's teaching of using resource-based activation facility and variable-based activation facility enables Du and AAPA's system to determine the capabilities of each component of each node and create services based on the determination (pp. 0067-0069).

16. As per claim 23, Du and AAPA taught the invention substantially as claimed in claim 21. Du and AAPA did not specifically teach that activating new instances of the multinode for each element in a vector when the activation is based on the variable-based activation. Dugan taught to comprise a new instance generation unit for starting new instance of the multinode for each new element in the variable identified by the vector (pp. 0067-0069). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Du, AAPA and Dugan because Dugan's teaching of using resource-based activation facility and variable-based activation facility enables Du and AAPA's system to determine the capabilities of each component of each node and create services based on the determination (pp. 0067-0069).

17. As per claim 24, Du and AAPA taught the invention substantially as claimed in claim 21. Du and AAPA did not specifically teach that the resource-based activation is based on a number of resources available for executing the workflow, and the variable-based activation is based on a vector. Dugan taught that the resource-based activation is based on a number of resources available for executing the workflow, and the variable-based activation is based on a vector (pp. 0067-0069, 0106). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Du, AAPA and Dugan because Dugan's teaching of using resource-based activation facility and variable-based activation facility enables Du and AAPA's system to determine the capabilities of each component of each node and create services based on the determination (pp. 0067-0069).

18. Claim 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Du et al (hereinafter Du), US 6,041,306, in view of Applicant Admitted Prior Art (AAPA), and Dugan et al (hereinafter Dugan), US 2002/0083166.

19. As per claim 25, a method for invoking multiple parallel instances of a same node, comprising:

- a. Defining a multinode as a node (col.4, line 10-28, 49-56) that allows for activation of multiple parallel instances of a same work node in a workflow (col.3, lines 1-10, col.4, lines 10-14, 17-22, 45-50);

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- b. Reading an activation rule to determine if activation of the multinode is based on resource-based activation or variable-based activation (col.2, lines 22-51, col.6, lines 1-6); and
- c. Activating the multinode to execute a number of plural instances of the same work node (col.6, lines 39-48)

20. Du did not specifically teach to allow activation of multiple parallel instance of a same work node. However, the teaching of allowing activation of multiple parallel instance of a same work node is applicant admitted prior art (see page 5, lines 3-21 of the specification). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Du and applicant admitted prior art (AAPA) because AAPA's teaching of multiple parallel instance to enable Du's method to have each work node to perform a sequence of activities in parallel and span to several business organizations (see Du, col.4, lines 45-56, see specification page 3, lines 20-21, page 5, lines 3-21).

21. Du and AAPA did not specifically teach that activating the multinode that (1) the number equals resources available for executing the workflow when the activation rule is the resource-based activation or (2) the number is read from a variable name that is a vector when the activation rule is the variable-based activation. Dugan taught to comprise a variable name reader for reading a variable name to determine a number of the multiple parallel instances of the same work node to activate when the activation is based on the variable-based activation (pp. 0067-0069). It would have been obvious to one of ordinary skill in the art at the time the invention

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was made to combine the teachings of Du, AAPA and Dugan because Dugan's teaching of using resource-based activation facility and variable-based activation facility enables Du and AAPA's system to determine the capabilities of each component of each node and create services based on the determination (pp. 0067-0069).

22. As per claim 26, Du, AAPA, and Dugan taught the invention substantially as claimed in claim 25. Dugan further taught that a new instance of the same work node is started for each element in the vector (pp. 0067-0069).

Response to Arguments

23. Applicant's arguments filed s 1-24 have been fully considered but they are not persuasive.

24. In the remark, applicant argued (1) page 16, lines 6-20 of the specification and figure 3 provides support for enablement and written description to overcome 112 rejections (2) Du does not teach "determining, based on an activation rule, whether the activation of the multiple parallel instances of the same node is a resource-based activation or a variable-based activation" because Du is silent regarding variable-based activation.

25. Examiner traverse the arguments:

As to point (1), the specification and figure 3 do not sufficiently support and enable one of ordinary skill in the art to make and use the invention since the specification lack written description regarding the claimed limitation of "at run time determining a number of work nodes

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to be activated in the multinode based on a number of elements in a vector. (see reason in 112 rejections above).

As to point (2), since claim 21 expresses the **OR** condition, the reference needs to show only one of either one of the limitations, in which determining, based on an activation rule, whether the activation of the multiple parallel instances of the same node is a resource-based activation (col.6, lines 1-6) is disclosed in Du reference. This clearly satisfies the claimed language of resource-based activation **or** a variable-based activation.

Conclusion

26. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ohi et al, Parallel Instance Discrete-event Simulation using a Vector Uniprocessor, IEEE Computer Society, 1991. pages 593-601.

27. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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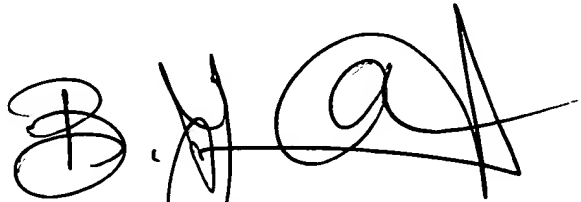
however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

28. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenny Lin whose telephone number is (571) 272-3968. The examiner can normally be reached on 8 AM to 5 PM Tue.-Fri. and every other Monday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bunjob Jaroenchonwanit can be reached on (571) 272-3964. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ksl
May 24, 2006



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